

Family LXXXVIII. PERRYIIDÆ.

Some representatives should be found.

Family LXXXIX. PTERYGOPHORIDÆ.

Well represented in Australia and some forms should occur in the Philippines.

Family XC. SELANDRIIDÆ.

183. *Senoclia albocærulea* Bingh. Luzon.

This family should have many representatives.

Family XCII. DINEURIDÆ.

Probably not found in the Archipelago.

Family XCIII. TENTHREDINIDÆ.

Fr. Castro de Elera, in his "Catalogo de toda la Fauna Filipinas" includes *Tenthredo variabilis* Kl., *T. neglecta* Kl., and *Dolerus niger* Kl., but gives no definite records.

Family XCIV. CIMBICIDÆ.

I see no reason why this family should not be represented in the islands.

NOTES ON OSMIINÆ WITH DESCRIPTIONS OF NEW GENERA AND SPECIES.

By E. S. G. TITUS,

WASHINGTON, D. C.

Genus ROBERTSONELLA Titus, 1904.

Robertsonella, new genus.

Slender, black, somewhat resembling *Chelostoma* (?) *campanularum* Kirby; clypeus truncate, broad in female, *mandibles tridentate in females*, sharply *bidentate in male*, malar space absent; antennæ normal in both sexes; labial palpi four-jointed, first joint not quite one half as long as second, third and fourth short, lateral, third slightly the broader and longer; *maxillary palpi four-jointed*, first and second equal and longest, fourth shorter, third nearly equal to fourth and over two thirds as long as first, fourth joint distinctly tapering to a rounded point; median nervure interstitial or at most received very slightly before origin of basal nervure, first submarginal cell longer than second, second narrowed one half above; claws cleft in male, simple in female; first dorsal abdominal segment rounded, with a narrow sulcus, male

with last dorsal segment (7), rounded, entire, with a faint trace of lateral angles, first ventral segment with a slight transverse swelling, second and third broad, second with lateral marginal swellings, third sinuate marginally, sides of abdomen very parallel.

Type of genus the following species :

Robertsonella gleasoni, new species.

♀. Length 5.5 mm. Black, shining, finely and rather coarsely punctured ; pubescence glistening silvery white, short and not thick on face, cheeks and mandibles with a fringe of longer hairs, sparse on thorax above, denser and longer on pleura, very short and sparse on abdomen, segments 1 to 5 with a narrow appressed apical fringe, interrupted (or rubbed), on segments 1 and 2, sixth segment densely clothed with short suberect hairs, ventral scopa dense and white, extending well up along sides of abdomen ; femora and tibia with sparse white hair and tarsi with dense slightly embrowned pubescence beneath on first joint, remaining joints moderately pubescent ; tibial spurs pale ; middle tibia not as long as first joint of corresponding tarsi.

♂. Length 5 to 5.5 mm. Closely resembles female ; punctures of head finer and closer, pubescence of face white, dense, appressed, that of clypeus long, very dense and snowy-white, slightly discolored at apical margin, hair fringing cheeks and mandibles longer and moderately dense ; antennæ reaching beyond tegulæ ; scutellum and metathorax with more pubescence than in female, abdominal segments 1 to 3 fasciate only at sides, 4 to 6 fasciate, fourth with white pubescence on disc ; seventh segment slightly flattened, apex of sixth slightly reflexed ; third ventral with a median apical patch of white hair.

Several specimens on *Phacelia purshii* at Grand Tower, Illinois, 9 May, 1902, by H. A. Gleason. 1 ♀ and 1 ♂ deposited in U. S. National Museum.

Type.—No. 6858.

Genus HERIADES Spinola, 1808.

Type : *Heriades truncorum* (Linné) 1758.

So far as I have been able to find, Spinola designated no species as the type of his genus ; however, in 1810, Latreille distinctly designates the above species as the type of *Heriades* (Consid. Gen. sur l'Ordre Naturel des Animaux, p. 439). Schenck in 1859 created for *H. truncorum* the genus *Trypetes*. This generic name was not admissible, since in 1836 Schönherr had used it for a coleopterous genus.

Hence Robertson's Trypetini and Trypetoidea will not stand and, for the tribal name, I propose *Heriadini*.

Our *Heriades carinatum* Cresson is congeneric with *H. truncorum* Linné, as also is the following species.

Heriades bruneri, new species.

♀. Length 6.5 mm. Shining black, pubescence of head and thorax pure white, of abdomen and tarsi yellowish. Head and thorax coarsely confluent punctured, punctures on disc of thorax sometimes separate, on clypeus not so coarse as on rest of head. Occiput (except hind margin), middle of face, clypeus, mandibles and disc of thorax with sparse pubescence. Head not so broad as thorax, face narrower than in *H. carinatum*. Antennæ short, black, slightly embrowned beneath; clypeus with a shallow central marginal concavity from which there projects a minute blunt central tooth and two smaller lateral teeth, outside of each of these latter, on the clypeal margin, is another minute tooth; labrum elongate, punctured, rounded at tip; mandibles broad at apex, with no "submedian dentiform angle," simple at base, tridentate, outer tooth sharp, slightly reddish, other teeth short, blunt, scarcely separable, cheeks fringed with white pubescence; maxillary palpi three-jointed, joints almost as in *H. truncorum* L.; labial palpi four-jointed, first as long as second; third and fourth short, subequal. Tegulæ polished, minutely punctured, wings very dark, veins black. Legs black, femora and tibiæ clothed with sparse white pubescence, hairs on tarsi quite bristly. Abdominal punctures fine, close, but separate, pubescence on hind margins of all segments, thin on 1-3, becoming denser successively on 4-6, these latter segments, especially 5 and 6, having short fulvous-yellow hairs on disc. Ventral scopa long and richly yellow.

♂. Length 6 mm. Closely resembles the female. Mandibles narrower at tip, outer tooth sharp; occiput smooth and shining at sides, antennæ reaching almost to tegulæ, pubescence of clypeus and fringe on cheeks denser and white, sparse on remainder of head and on thorax; tegulæ paler than in female; pubescence on hind margins of first two dorsal abdominal segments whitish, on segments 3-5 yellowish, hind margin of sixth segment bare, evenly rounded at apex. A slight enlargement of first ventral segment may be seen, but it is not sufficiently developed to call a tooth, first two ventral segments coarsely punctured.

Three ♀ at Juan Vinas, Costa Rica, 2 March, 1902, and one ♂ at Monte Redondo, Costa Rica, 3 March, 1902, by Prof. Lawrence Bruner. One ♀ and one ♂ deposited in the U. S. National Museum.

Type. — No. 6857.

Genus PROCHELOSTOMA Robt., 1903.***Prochelostoma philadelphia* Rob.**

I have examined a number of specimens of this species from Columbus, Ohio, collected May 24, 25, 28 and 29, 1902, by J. C. Bridwell.

The spurs on the middle and hind tibiæ are distinctly serrated, on the hind tibiæ one being short and sickle-shaped, the other long and more coarsely serrated. The middle tibia has a distinct prominent tooth on the outer side at the apex. Maxillary palpi short, first joint globular, second stout, about as long as fourth, third shorter than second, about as long as first, third and fourth slender, fourth tapering, somewhat finger-shaped.

Genus PROTERIADES Titus, 1904.

Proteriades, new genus.

Type: *Heriades semirubra* Ckll. 1898. Trans. Amer. Entom. Soc. XXV, p. 198, ♂.

Mandibles bidentate, inner tooth the shorter, teeth of equal length; labrum elongate, polished, slightly convex, truncate at apex, sides parallel, ferruginous; clypeus at apex with a narrow polished edge, faintly curved, slightly convex and with a minute polished tooth in the center; scape of antenna slightly swollen and deeply punctured; head shaped as in *Ashmeadiella buconis* (Say), as broad as thorax, "ocelli in a triangle"; "facial quadrangle much longer than broad, orbits parallel" (Cockerell, l. c.). Maxillary palpi short and stout, *four-jointed*, first and third joints equal, second one half longer than first, fourth more slender than others, slightly shorter than third, first joint subglobose, third scarcely as wide as second; blade of maxilla rounded at apex, *outer edge of blade with a row of long spines each hooked at the tip*. Labial palpi short, stout, covered with many short spines, *second joint one and a half times as long as first, third joint short, wide, longitudinally concave, last joint slender, shorter than third and set deeply into the concavity of the third joint*. Marginal cell about as long as first discoidal, apex not attaining the margin, stigma small, second submarginal shorter than first, strongly narrowed above, transverse median nervure received before origin of basal nervure. Abdomen shaped as in other *Heriadini*, sixth segment with a short tooth on each side, apical segment deeply foveolate above, broadly truncate, with a central apical emargination, second ventral segment with a small transverse swelling, ventral segments 3-5 apically emarginate, the fifth quite deeply so and all faintly swollen transversely. *Basal impression of first dorsal segment not bounded by a carina, concavity shallow, broad, impunctate*.

While some of the above characters may later prove to be simply specific it is thought best to give them in detail now.

When Professor Cockerell described this species he stated that it was "by no means a typical *Heriades*, yet it is not an *Ashmeadiella*." The type specimens were from "Southern California, two sent by Mr. Fox." I have before me one specimen taken in Los Angeles Co., Calif., by Mr. D. W. Coquillett. Mr. Fox writes in answer to questions of mine regarding the type at Philadelphia: "Second ventral segment reddish, the third to fifth reddish-fuscous or almost entirely fuscous. Second ventral segment and (especially third to fifth) with a transverse fold or swelling which is emarginate or less prominent medially on segments 3-5. Sixth dorsal dentate laterally. Seventh dorsal foveolate. Seventh at tip agreeing very well with your drawing."

This species although at first sight superficially resembling *Pseudosmia andrenoides* Spinola of Europe is not related to that species. The latter being a true Osmiinae closely related to *Nothosmia*. I have examined specimens determined by Dr. Schmiedeknecht.

Proteriades may be separated from true *Heriades* by the absence of the superior carina on first dorsal segment; from *Ashmeadiella* by the structure of the last dorsal abdominal segments. The general shape and italicized characters will separate it from other described genera known to me.

One specimen deposited in U. S. National Museum. No. 6855, genus type.

Genus **OSMIA** Panzer, 1806.

Type. — *Osmia rufa* (Linné) 1758.

This species described by Linné as *Apis rufa*, ♂, and *Apis bicornis* ♀, was designated by Latreille in 1810 (Consid. Gen. sur l'Ordre Nat. Animaux, p. 439) as the type of the genus *Osmia*.

Osmia lignaria Say, *Osmia lignaria*, var *a*, Cockerell, and *Osmia propinqua* Cresson are the only American species I have seen which belong to this genus.

Genus **MONUMETHA** Cresson, 1864.

Type. — *Monumetha argentifrons* Cresson, 1864.

A character I have not seen mentioned in connection with this genus is the presence in the center of the hind margins of the first and second ventral segments of the ♂ of a sharp slender spine. The type species is very variable in size and in amount of pubescence present. A specimen collected this past summer by Mr. Rolla P. Currie at Kaslo, B. C., has the abdominal fasciæ all present and entire and the disc of the thorax densely covered with pubescence.

Genus **ZACESTA** Ashmead, 1899.

Type. — *Zacesta rufipes* Ashmead, 1899, ♂.

Described from two specimens taken by Mr. D. W. Coquillett in "Los Angeles Co., Calif." U. S. National Museum, type No. 5257.

I have examined the type specimens and the mouth parts of another specimen of this species taken in the same locality by Mr. Coquillett and find that *it is not a megachilid*. The labial palpi are four-jointed, first three joints nearly equal, the second a trifle the longest; and the fourth joint distinctly shorter than either of the others. Maxillary palpi six-jointed, basal joint shortest, rather stout, fifth slightly longer, very slender, fourth twice as long as first and slender, sixth almost as long as fourth, slender, second and third subequal slightly shorter than sixth and moderately stout. The total length of the maxillary palpus slightly exceeds that of the blade of the

maxilla, which is broad at the base and widely rounded at the apex. The transverse median nervure of the anterior wings enters far before the origin of the basal nervure ; marginal cell acuminate, but not sharply so, scarcely attaining the costa at the apex ; first cubital cell the longer, second narrowed at least one half above, the second transverse cubitus strongly bent ; stigma small, narrow. Second joint of hind tarsi normal, normally inserted on the first ; claws cleft ; pulvillus present. Abdomen distinctly fasciate ; “pygidium triangular, entire, the hypopygium normal” (*Ashm.*). The above characters will I believe separate the genus from any hitherto known and place it, at the same time, in the Panurgidæ.

In *Zacesta rufipes* the mandibles are elongate, pointed sharply, and with a poorly defined tooth set nearly half way back on the inner side ; clypeus is yellow on the apical half only, labrum yellow, mandibles yellow at base blending into ferruginous at apices : ocelli in a curve ; antennæ longer than head, scape deep brown, flagellum yellowish ; tegulæ yellowish, shining, hairy ; legs reddish-yellow, spurs white, claws dark ; pubescence rather sparse, especially on thorax ; abdominal segments 1-5 fasciate apically, 6 and 7 with dense short appressed pubescence. All the pubescence is cinereous, that on thorax and vertex slightly yellowed, and on legs appearing silvery and glistening.

Class I, HEXAPODA.

Order II, COLEOPTERA.

BIOLOGIC NOTES ON SPECIES OF LANGURIA.

By F. H. CHITTENDEN,

WASHINGTON, D. C.

Until the year 1879, when *Languria mozardi* was reported by Professor J. H. Comstock in the stems of red clover (*Ann. Rept. Comm. Agr.*, 1879, p. 199), none of the species of *Languria* were known to subsist at the expense of useful plants ; in short, nothing appears to have been published prior to that time of the larval food habits of our American representatives of the genus. Messrs. F. M. Webster and C. M. Weed have both contributed to our knowledge of the biology of this species, and the writer has furnished in *Insect Life* (Vol. II, pp. 346-